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IN,

1861.

DR. HUNT offered the following Preamble and Resolutions, which were unanimously adopted, viz. :

*Whereas*, the address on "Life," delivered by our late President, Dr. WOODWARD, contains much valuable practical information, which, in the opinion of this Convention, will be received and read by all intelligent persons, both with pleasure and advantage : therefore,

*Resolved*, That 750 copies of this address be printed, in pamphlet form, and circulated by our Secretary, especially among the Clergy of the State and those engaged in the immediate management of our Schools and Educational Institutions of every class.—*Extract from Minutes of the sixty-ninth Convention of the Conn. Medical Society, at New Haven, May 22 and 23, 1861.*

P. M. HASTINGS, M. D., *Secretary.*

ARTICLE III.

ANNUAL ADDRESS.

BY ASHBEL WOODWARD, M. D., OF FRANKLIN,

*President of the Society.*

Read at the Annual Convention, May 22d, 1861.

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L I F E .

THE mystery of life is a profoundly interesting theme for contemplation. Even in the lower grades of organic bodies—in plants and inferior animals—the student of nature finds abundant material to occupy his attention, and much to baffle his curiosity. On passing to the study of the *vital principle* as it appears in man, the subject becomes more complex, more subtle, and consequently more extensive in its demands upon our thoughts and imagination. In man the vital principle is the mysterious bond confining an immortal spirit within its temporary and fragile tenement. In him an organism endowed with appetites shared in common with other animals, is united to a higher, a spiritual life, which opens to him a new world as well in the present as in the future. While the union between body and spirit remains unbroken, their reciprocal influence on each other has much to do in determining the issue not merely of morality, but of health and longevity also.

As man was the last object of the visible creation, he is likewise the most perfect. Made in the image of God he is launched into existence laden with responsibilities and freighted with precious hopes. Rising infinitely above other animals in the endowments of reason and intellect, he far surpasses them in delicacy and nice adjustment of corporeal structure. In the creatures designed for the use of man and placed under his dominion, *utility* forms the predominant idea in the plan of physical contrivance. Whether made for food, or labor, or simply to sport awhile as idlers, they manifest

the possession of no lofty or etherial qualities. The outermost circumference of their being embraces only agility, strength, endurance and docility, attributes essential to present usefulness, but pointing to no ulterior destiny.

On the other hand, in the case of the human species, from the moment the process of development commences in the germinal speck, through all the stages of subsequent growth, the corporeal frame and functions have obviously been contrived in order to make a temporary home for the soul. The immaterial part of our nature must act through the material. Bone and muscle are the obvious instruments through which an invisible spirit impresses force upon objects of sense. The presence of the spirit depends on the uninterrupted supply of food, drink and breath. The brain and nervous filaments form the medium of communication between the soul and bodily substance. In the brain resides the intellect. Along the white cords extending from this glorious temple of thought, the will transmits imperial mandates. As soon as the first trace of nervous pulp appears in the embryo, we see a subordination of all other parts of the mechanism to it. Around this as a center, and to supply its wants, are formed the heart, the stomach, and the lungs. From the earliest, crude, intra-uterine germ, the progress of physiological development is subservient to psychical development. As new conditions arise in the gradual evolution and expansion of the primitive germ, they are met by corresponding changes in organic forms and functions. Respiration is successively carried on by a membrane, by gills, and by lungs; the circulation is sustained first without a heart, then with a heart of one cavity, and at length with a heart of four; nutrition is afforded by a wide diversity of means till the stomach supplants them all at birth. Not only has one kind of organ succeeded another, but their very substance has changed many times by interstitial death and removal. The only identity of the body is one of form and not of material. Yet the same principle which animated the germ, also animated the embryo, and forms the life of the man. It is this that continues identical in the distant points of germinal inception and senility. It is this that will not perish with the body but live on forever.

Life, physiologically speaking, is maintained by an incessant struggle with death. Opposing forces are arrayed against each

other, the battle never pausing to allow the combatants a moment's repose, till the destroyer gains his final triumph. On the one hand the vital power acting through the various organs of the body, transforms food and drink into homogeneous, living substance. While the creative force is busy in converting aliment into blood, bone and tissue, the chemical or decomposing force is equally active in demolishing the curiously wrought fabric. Effete molecules are continually liberated, from the mass of which they recently formed a living portion. Every organism is a mere figure or outline, which an unnumbered host of particles, ceaselessly arriving and departing, fill up. Foreign substances are introduced into the system through the digestive apparatus, and after a brief transformation into vivified atoms, loose their vitality and are cast aside. They come and go like the waters of a river. The constituents of the stream undergo perpetual change, yet the river remains the same.

If asked to define what the vital principle is, we should find the undertaking difficult. Scientific researches have unveiled many mysteries, yet many still remain beyond the ken of science. To view it, as some have done, as one of the natural powers belonging to the same group with heat, electricity and magnetism, is equally abhorrent to the sensibilities of the Christian and the dictates of reason. Were such a conception true, we should be compelled to renounce the crowning glory of humanity by the resignation of our faith in immortality. It is easy to invent general terms and refer phenomena to them. On endeavoring to apply them to exact use, however, we often find that they have led us astray into vague speculations.

So long as the vital principle animates the body, many of the laws to which matter is obedient are counteracted or held in abeyance. Notwithstanding the immense waste of substance incident to the chemical reactions going on within the system, the human mechanism may continue to perform its work for many years. But let the vital knot be cut even in the midst of the highest health; the form recently aglow with intelligence and activity, is now yielded wholly to the dominion of material forces. Myriads of animalcules burst from the stagnant juices to devour the substance which those juices a few hours before were busy in nourishing. Decomposition hurries on, and shortly the proudest offspring of creative power becomes a loathsome mass of ruin.

What we call life, then, is indicated by the presence in the body of the active spiritual part of man. Indestructible and immortal, it impresses a temporary vitality upon the particles successively constituting fibre and blood. Its potency may be inferred from the effects it works independently of the will. A full sized man has in his vascular apparatus at least fifty pounds of blood. The heart contracts seventy-five times per minute with sufficient force to propel its contents through the aorta to the minutest capillaries. Assuming that there are five pounds of fluid in the effluent currents, this weight will be lifted forty-five hundred times in a single hour by the involuntary pulsations of the heart. Or if we suppose the muscular exertion thus equably diffused over a period of sixty minutes, to be concentrated in one effort, more than twenty thousand pounds would be lifted by the heart and hurried to all parts of the frame. Yet such immense labor is hourly performed for many years, and with an ease that leaves us entirely unconscious of the outlay of force which keeps this hydraulic engine at work.

When we reflect upon the consumption attending every movement of the body, whether voluntary or involuntary, upon the delicacy of its machinery, and the continuity of its labor, we wonder how it can last so long. Other animals, vastly superior in strength, though breathing the same air, and subsisting on food exactly suited to their wants, sink into decrepitude before man has half attained the maturity of his growth. Generally speaking, a coarse, tough, and imperfect organization indicates the strongest tenacity of life. The gnarled oak braves the storms of many centuries. Inscriptions found on the shell of the tortoise connect its existence with widely distant points of time. Animals of simple structure have exhibited manifestations of life after entombment for immemorial ages. Passing to wild beasts and domestic animals, we find an astonishing diminution of vital tenacity. As their organization is more perfect, their wants more numerous, and their generative function more exalted and therefore more exhaustive, so their powers are more rapidly consumed. Man presents an exception to the general laws. The two extremes of organization—the most complete and the most incomplete—are alike in resisting most successfully the ravages of time.

Passing by, as foreign to our present purpose, the obscure physiological analogies which intimate the possession of certain qual-

ities in common by all long-lived creatures; we think that the superior longevity of man is due in a great measure to his spiritual endowments. Reason, intellect, soul, place him in communion with a world entirely distinct from the world of sense. Two natures are mysteriously united in the body. High mental and moral culture imperceptibly refines and improves the physical texture. Brain-substance and muscular fibre become more delicate and enduring under the influence of judicious intellectual training. Moreover from the domain of thought and fancy, of emotion and affection, are drawn wonderful supplies of nourishment that spiritualize and lengthen life. The immaterial, shadowy, yet potent food of the mind, does not, like corporeal aliment, require a destructive process for its assimilation. Here, unlike the physical forces producing waste and repair, which at best maintain but a doubtful equilibrium, *all* the figures *ought* to be found on the profit page. Mind acting normally, is pre-eminently original and creative. In this view the appropriation even of the accumulations of others is to the student a *quasi* original process attended with the charm and benefit of novelty. Since spirit is immortal, it can not wear out with use. It follows that through his intellectual and moral nature man derives from the invisible world of thought and feeling, constant accessions to the store of vital force.

Mental cultivation, pure social enjoyments, the indulgence of refined tastes, possess an efficacy far transcending the excellencies ascribed to their elixirs by mediæval alchemists. Literature bearing down the stream of time precious treasures of knowledge, perpetuating the cumulative wisdom of the past, and embalming for ever the creations of fancy by enlarging and ennobling the area of human action, adds to the duration of human life. Music, painting, sculpture, in short whatever imparts pleasure through the medium of the higher attributes, accomplishes the same end by softening the asperities and diminishing the friction of our earthly journey. The hopes stretching forward into an eternal hereafter, and making man a prospective sharer in all possibilities of happiness and glory, wonderfully augment his resources for resisting the deadly agencies of time.

Again, the gift of reason, a faculty denied to other animals, enables man to discover the laws of health. We learn from experience that certain articles are wholesome and certain, others injurious

when used for food. But substances indigestible or poisonous if taken in excess, may prove extremely valuable in minuter quantities. Experience gives us facts. Reason interpreting the meaning and significance of facts, deduces from the multiplicity of them a few uniform rules. Unseen causes active in nature, manifest their existence by their effects. Reason taking up apparently isolated and independent effects, explains their origin, connection and purport. Without reason, man would have a poorer chance than the beast for the preservation of life, because he would lack, besides, the guidance of instinct. Yet it is common to speak of man as a child of nature who attains the highest physical perfection in a state of barbarism. Some seem to think that the external surroundings of the savage, almost unmodified as they are, by the interference of reason, are pre-eminently conducive to health and longevity. In their view every change wrought by civilization upon primitive habits is necessarily deleterious to the human constitution. But such a position is wholly untenable. Experience and common sense alike contradict the dogma. An All-wise Father never decreed that the idle barbarian should in any respect excel the enlightened. Is not every *good* the fruit of toil? Not only high attainments but even *comfort* is the result of much antecedent labor and thought. Our existence is a perpetual struggle against obstacles, and without obstacles to overcome life would hardly be worth the name. In tropical regions, the spontaneous growth of the earth supplying the means of subsistence without exertion on the part of the native tribes, they seldom ascend above the foundation-story of civilization. In high latitudes many fierce assailants must be vanquished to secure even the continuance of the race. While nature is still kind, she makes the fruition of her bounties dependent on the intelligence and energy of those who would enjoy them. She furnishes seed and soil, and then sternly commands us to work for harvests.

Nor are her impositions less exacting when the granaries have been filled in autumn, for, before the corn is ready for food it must by an important chemical process be transformed into bread. Our clothing, our houses, in short all the comforts about us, are directly or remotely the offspring of an infinitude of toil, study, and ingenuity. The combinations necessary to form the steam-engine or the factory-loom, were as possible three thousand years ago as to-

day. But man was compelled to discover for himself the capacities thus latent in iron, wood, and water. The richest bounties of Providence are not obvious to the senses. The Creator hid countless treasures out of sight, that the pursuit of them might stimulate human intellect to action. As gold and silver and coal are buried in the earth, as pearls rest beneath the billows of the sea, so the most valuable truths and principles are often concealed far below the surface.

Reason, enlightened by study, is as important in the investigation of the laws of health as of physics. The unrestrained promptings of nature are often most dangerous guides. Wisdom purchased at the cost of many bitter experiences, admonishes man to beware of yielding blindly to her impulsion. If we would seek security against the dangers which beset our pathway, we must exercise intelligence, resolution, and judgment at every step. Hygiene as a science, like chemistry or botany, can only be elaborated by patient research.

Appetites are essential to the preservation both of the individual and the species. But their innate strength is an ever-present temptation to hurtful excess. Virtue springs from the proper control of the active animal impulses, and virtue is the twin brother of health. When passions are riotous, and the siren songs of pleasure most seductive, reason at the same time lifts the voice of warning, and fortunate is he who heeds it. Life is environed with perils, but many of the most imminent are in a measure of our own creation, and may be shunned by prudence.

Infants at birth are like boats pushed from the land into a dangerous ocean. Some go down in the act of launching. As the fleet moves from the shore, one after another of the tiny craft disappears beneath the wave. A third have perished ere the weakness of childhood grows into the strength of youth. They are now entering upon the most tempestuous part of the sea. The wind no longer blows in steady currents, but in fitful gusts and furious gales. Yet how large a share of the rash navigators spread every inch of canvas, and bound recklessly over the surging waters. Wrecks are abundant—wrecks shorn of former beauty, goodness, and strength. Some having dashed into these perils with headlong indifference, as if by miracle escape. Many escape, however, with torn sails and shattered sides, rotten and unseaworthy. Another division, having safely passed the shoals and quicksands of youth, brave the

storms of manhood triumphantly. It is needless to remark how generally their good fortune is due to past moderation and prudence.

In old age the benefits of early obedience to hygienic laws, appear most strikingly. Where the system has been abused, the organs successively fail to perform their normal functions. Incurable suffering is engrafted upon a constitution prematurely shattered. Existence becomes a curse, and death, though shrouded in dread uncertainties, is often coveted as the last remaining boon. But a summer's evening is not more serenely peaceful than the old age which concludes a life of virtuous self-restraint. As the sun sinks with even pace adown the western slope, emblazoning its glories upon the clouds, and bidding adieu to day in the midst of golden radiance, so such a one passing the verge of life, enters the confines beyond, so naturally and beautifully, that death seems but the sweet repose of a wearied body.

Of a hundred children, few will pass the moderate limit of three score years and ten. Of a million, only two or three will reach their centenary birth day. Yet on referring to the early annals of the race, we learn that the outermost limit now allowed to the continuance of life, found our ancient ancestors in the fresh bloom of manhood. Century followed century ere they were bowed to the grave by the weight of years.

In this connection two questions naturally suggest themselves:

I. What has caused this degeneracy?

II. Is renovation possible?

1. When the first pair came from the hand of God they embodied the highest ideal of physical perfection. We may well believe that their organism was so complete as to confer what would now seem a miraculous immunity from suffering and decay. The first transgression, however, lifted the floodgates of destruction. Thereupon an empire of peace was invaded by unholy passions and debasing lusts. Moral turpitude and physical degeneracy stalked forth arm in arm. The earliest born of men was a murderer. Soon the corruptions of the race demanded the extinction of all save a single thread in the waters of the flood. Cities were destroyed by fiery showers. Even earth herself gaped open in seams to engulf the impious. As the tide of wickedness rose the span of life grew shorter. Sinful practices both multiplied the

forms of disease and diminished the capacity for resisting their ravages. Now an inexorable law interposed its decree—"The iniquities of the fathers shall be visited on the children,"—a decree fearfully infallible. The dissipations of the father reappeared in the sickly form of the son. He in turn surrendered a more fragile body to the gratification of similar appetites and lusts. Thus the work of deterioration has progressed, till for many centuries past, a large percentage have been born without sufficient viability to survive the period of infancy. Many cursed with the transmitted penalties of sin, are unfortunate enough to outlive the perils of infancy only to suffer till the feeble flame of life is extinguished by the first rough breath it encounters. Armies of maladies, brandishing the sword of death, have thus been sent forth to work destruction.

This truth is further illustrated by the hereditary character of many distempers. Poisons dissolved in the blood, tendencies to certain kinds of death, pursue families for generations. Gout, apoplexy, scrofula, consumption, often descend as an inheritance from parent to child. A novice entering upon the study of medicine, is astonished to find that among the predisposing causes of disease the hereditary taint enjoys such unenviable preeminence. And this is frequently engrafted on a stock by excesses or sins. The burly English fox hunter suffers the pangs of gout with the more equanimity since the twinges of his great toe are a sure token of the luxurious habits of his ancestry. Over-indulgence in wine and rich food imperceptibly introduces into a family the apoplectic diathesis. Let the venereal virus once circulate in the blood and burrow in the bones, and the poison will reappear in the sickly countenance and frail figure of the great-grandchild.

In tracing the lineage of an individual we find that the number of ancestors increase in a geometrical ratio with the receding generations. There flows in his veins the blood of two parents, four grand parents, and so on in the scale of ascent. Assuming that there have been no intermarriages among them, the tenth degree of removal will give more than a thousand ancestors for that degree alone. This consideration shows how inherited predispositions to disease may intermingle and multiply with the lapse of time. We no longer wonder that millions annually perish on the threshold of existence. It ceases to excite surprise that we so sel-

dom meet even with distant approximations to perfect physical development. When the sculptor wishes to cut in marble an Apollo or a Venus, he is compelled to take a face from one, a bust from another, an arm from a third, a hand from a fourth, till minute and isolated excellencies of form have perhaps been culled from the people of an empire to give embodiment to a solitary ideal.

The causes enumerated are sufficient to have reduced materially the average vitality of the patriarchal period. Add to these the prevalent ignorance of hygienic principles and contempt for their observance. We have already spoken of the deleterious effects of intemperance and vice. But aside from immorality, many causes operate noiselessly but surely in undermining health. Some are so prevalent that familiarity with them blinds us to the extent of their baneful influence. One drawing after it momentous consequences, is brought daily to the notice of the physician.

Upon the constitution and sanitary condition of the mother depends in a great measure the stamina of her offspring. Yet by sedentary habits, by the persistent neglect of exercise in the open air and sunlight, elements essential to the well-being of all forms of life, American women are very generally incapacitated for transmitting a vigorous *stamen vitæ* to their children.

Again, the injudicious management of the young, often diminishes to a still lower point the scanty supply of vitality with which they were furnished at birth. Infants are confined in close rooms, buried in blankets, fed on highly seasoned and stimulating food, drugged with cordials, and surfeited with tea, coffee, candy and cake, all of which are absolute poisons to their delicate organs. In consequence of such nursing, life is intensified and their whole being exalted to a state of preternatural sensibility, whereby the predisposition to disease is fearfully increased. We are persuaded that the secondary appetites have sometimes been fully formed during the first year of infancy. The babe cries, whereupon the nurse administers some alcoholic preparation to relieve an imaginary cholic. The "medicine" evidently works like a charm, for the wailing ceases and deep sleep ensues. A recurrence of the cry brings a repetition of the dose. Yet the apparent slumber was not the repose of nature, but the stupor of intoxication. The child thus wickedly outraged is in reality a drunkard. The thirst for spirituous liquors is fully developed. During early boyhood

the appetite may remain latent because the means of excitement are removed. But when temptation is thrown in his way, a solitary sip may revive the slumbering taste. The demon seizes upon the youth with pitiless power, and he takes to the cup with the reckless self abandonment of the confirmed sot.

But it is painful to pursue in detail the causes of the physical deterioration which we all experience and observe. The tables of mortality, the multitude of early deaths, the rare instances of longevity, and the long list of human maladies, indicate a sad decline from the strength and endurance of the early progenitors of the race.

2. A more interesting inquiry relates to the possibility of renovation. Can the boundary of life be enlarged? Can the limit of threescore years and ten be pushed far backward in the measure of our earthly destiny? Many considerations support the affirmative of the question. Both facts and the reasonable interpretation of general principles authorize the belief that the average duration of life is much shorter than it ought to be. Instances of great longevity are not wanting in modern times, and from them we may learn the essential conditions of longevity.

Thomas Parr, an English laborer, reached the age of one hundred and fifty-two years. His last undertaking was a visit to London, whither he was drawn by the desire of the king to see so rare a curiosity. The sumptuous entertainment now substituted for the homely fare to which he had always been accustomed, killed him. A *post mortem* examination, conducted by Dr. Harvey, revealed a perfectly healthful condition of the internal organs. No sign of decay was visible. Even the cartilages were not ossified, death ensuing wholly from the surfeit of rich food.

Henry Jenkins, of Yorkshire, died 1670, in the one hundred and seventieth year of his age.

The case of the Italian, Cornaro, affords a remarkable instance of renovation. At forty he was brought to the brink of the grave by a career of dissipation. Physicians assured him that speedy death was inevitable, recommending a spare diet in the place of further and useless medication. Having greatly reduced his allowance of food and drink, he rapidly recovered, becoming stronger than ever before. Like a wise man he afterwards adhered to the frugal regimen. Twelve ounces of food, and thirteen of drink,

constituted his daily allowance for sixty years. Meanwhile, by cultivating a philosophic and equable frame of mind, he avoided all extremes of passion and feeling. At the age of eighty, overcome by the importunity of friends, he increased the quantity of his nourishment. This change in diet was followed by dejection, pains in various parts of the body, and in a few days more by a fever, which for five weeks kept him suspended between life and death. On recovery, by strictly observing former habits of abstinence, he lived till his hundredth year in the enjoyment of fine health and unclouded spirits.

This case shows the recuperative force inherent in the human constitution. At the age of forty, Cornaro was prematurely old. Excesses had nearly exhausted the vital fuel allotted to him by the Creator. Yet the residue, by unsparing economy, continued to hold out and reproduce itself for a long period of time.

The pliability of our organs is certainly great. A broad margin in the use of food and drink is tolerated without immediate ill effects. The robust may fare luxuriously for years with hardly a twinge of pain as a reminder of the danger. But long and severe tension will destroy the elasticity of the best bow. The boasted digestion of the epicure at length fails. New stimuli are resorted to and stronger reactions follow. The sufferer learns too late that every superfluous pound of food, requires for assimilation the expenditure of a portion of reserved vital force.

Individuals who have attained an extraordinary age have invariably husbanded their physical resources by rigidly temperate habits. Most of them are found among fishermen, farmers, and others whose pursuits in the open air unite agreeable diversion with wholesome bodily exercise.

One fact often brought to the notice of the attentive observer, is conclusive as to the value of frugality and abstinence. Delicate children not unfrequently reach extreme senility. The grey-haired patriarch will tell you of his early weakness, dwelling at length on the care which purchased a vigorous manhood and hale old age. At a time when temptations were strongest, and visions of pleasure most seductive, fragility of constitution deterred him from indulgences to which hardier comrades gave way. Robust youths fairly brimming with exuberance of life, are prone to tamper recklessly with their glorious gifts. Seldom experiencing pain, lassi-

tude or fatigue, they learn to look upon them as evidences of unmanly weakness. In toil, in sport, in all the wild outgush of nature, they rush to extremes. Under such pressure the machinery of the body is rapidly worn. Iron muscles become rigid, and stiffness settles in the joints. One organ after another fails to perform its work properly, till premature death closes the scene. On the other hand, the valetudinary, carefully, though perhaps unconsciously, pursuing a course of uniform moderation, finally reaches the goal, years after the fleet runners, whose exploits were the admiration of his youth, have disappeared forever from the course.

In your journeyings you sometimes have taken passage in a steamer built chiefly for speed. Her timbers are sound and her joints close. To insure the requisite swiftness, a powerful engine has been incorporated as an integral part of the craft. As the boat gets under headway, you are astonished at the velocity of her motion. But from stem to stern she quivers like a leaf. The planks beneath your feet palpitate incessantly. The suspended lamps, the slack casements, in short all movable objects, rattle in unison with the tremulous jar. You feel assured at once that the boat can not long withstand the wear and tear of the mighty force propelling it.

So excess of whatever character wears out the human frame. Severe bodily labor, close application to books, and the many kinds of violence which may grow into daily habits, make unnecessary drains upon the reserved fund of life. In many cases the supply which might have lasted sixty years, is exhausted in six. "Let your moderation be known," is an excellent sanitary maxim.

The physician of this enlightened age has a higher duty to perform than the simple administration of medicine to the sick. It is incumbent on him as guardian of the public health, to go behind mere symptoms and pains, to investigate ultimate causes, to ascertain by patient research the essential conditions of health and longevity, and then to teach others the truths he has learned. He who is *content* to combat this or that sign of disease with the weapons of the *materia medica*, is stumbling at the threshold of his work. It devolves upon physicians to take the foremost rank in endeavors to improve the physical condition of the race. Many discouragements may deter him from entering heartily upon this high mission, for patients are frequently obstinate pupils. Not a few prefer the

temporary gratification of indolence, intemperance, or luxury, to the lasting enjoyments consequent on rigorous self-government. The doctor must expect to see his warnings disregarded, and his affectionate appeals treated with practical contempt. But let him persevere. The civilized world is awakening to the importance of the subject. It turns discontentedly from the massive wisdom, the ingenious inventions, the sublime discoveries, the God-like triumphs of humanity over material things, to the fragile bodily forms composing the hosts of this all-conquering civilization. Within a few years, medical statistics have been industriously collected. Legislators have aided in gathering the information which is to test the truth of theories. Physiological departments are being established in academies and colleges. Improved sanitary regulations have been adopted in the army and navy. The march of reform has extended to factories, to mines, and to other fields of labor where large numbers are congregated within a narrow compass. Another gratifying feature of the times worthy of our heartiest commendation, is the systematic course of physical exercise adopted in many elementary schools, as a part of the regular training. With so much to offer encouragement in the popular movements of the day, we ought to redouble our exertions for bringing the laws of health home to the knowledge and conscience of the people.

Although hygienic truths have been diligently investigated by members of the medical profession, and now form an invaluable part of medical learning, the community still remains more profoundly ignorant in this department of knowledge than almost any other. They are content to adopt the suggestions of science in the ventilation of public buildings and other matters of common concern, without a thought that the same principles sustain an intimate relationship to their own personal and immediate well-being.

The present generation, like many before it, is suffering for sins not its own. If the living representatives of the race desire to improve its quality, it becomes them to transmit as light a burden as possible to their successors. The capacity for self-recuperation belonging in a greater or less degree to every individual, is ready to aid in the removal of the inherited weight of our infirmities. If the outside causes which foster disease and break the constitution, should cease to operate, evidences of pristine vigor would soon

begin to reappear. God bestowed upon man at first a perfect physical structure. It has been reduced to its present disordered state by errors and sins. Yet through all its misfortunes, we believe the original *possibility* of perfect health has survived, though hidden from view by the masses of corruption which folly has engendered. This obscure *possibility* or germ is evidenced by that quality of the vital principle which sometimes revivifies the system after being worn out by abuses and brought to the brink of dissolution. Reformed drunkards, lifted from their degradation at the last moment compatible with the continuance of life, have slowly regained their lost powers and lived for years. Digestive organs to all appearance hopelessly ruined by pampering the appetite, have become strong again from rigorous abstinence. Infants after hanging over the grave for weeks from the tenuity of the vital thread, and children of the utmost fragility, have through careful nurture, attained to a ripe maturity. When the strong have studiously husbanded the fund of life, they have in repeated instances survived to see more than twice threescore years and ten.

Facts like these show the potency of the principle. Hitherto it has antagonized the effects of all the deadly forces perpetually at war with our existence. For forty centuries it has repaired the inroads made in numberless ways upon the human constitution, preventing the further deterioration of the race. We may reasonably infer that if all mankind should wholly abstain for several generations from actions and habits prejudicial to health, allowing the recuperative power full scope, posterity would in the end regain the noble physical development which our ancestry lost.

And what is to prevent each one from contributing his part, both by precept and example, to forward so glorious a work? The lifelong toil of the parent is sweetened by the reflection that the offspring of his blood will thereby be furnished with the means of improvement and happiness. The benevolent old man plants trees by the wayside that the traveler may enjoy the shade, long after he himself has sunk to his final slumber. The horror of transmitting a tarnished reputation has saved some from the commission of crime. Let such natural and generous impulses widen their sphere of influence. Let the father and mother be as anxious to bestow on their children a good constitution as a large fortune or honored name. Surely, the reward extending far downward into coming

time, and blessing millions yet unborn, will a thousand fold repay for the self-discipline that the man of to-day may feel called upon to practice.

Statistics gratify us with the assurance that the advance of civilization has greatly lengthened the average of life. But present melioration is only a dim foreshadowing of what we may rationally expect hereafter, for the comforts incident to increasing prosperity and wealth are sufficient to have produced it. When to the advantages of better houses, clothing, and food, are superadded the benefits of judicious physical culture ; when pure intellectual and moral pleasures take the highest place in the affections, the work of renovation will go forward in a manner worthy of our rapidly progressive civilization.